

AMENDMENT UNDER 37 C.F.R. § 1.111  
Appln. No. 09/673,143  
Attorney Docket No. Q60989

**REMARKS**

Claims 1-17 are all the claims pending in the application. Claims 1 and 11 are independent claims.

**Claims Rejections Under 35 U.S.C. § 103**

Claims 1-17 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *previously cited* Hendewerk et al. (US 6,270,856 B1) in view of Maxfield et al. (WO 93/04117).

***Claim 1***

With respect to independent claim 1, Applicants respectfully traverse this rejection at least because there is no motivation or suggestion to modify Hendewerk's power cable in such a way that the modified power cable would meet all of recitations of claim 1. For example, there is no motivation or suggestion of the claimed medium-voltage to high-voltage power cable having a covering layer with an inorganic compound made from a nanocomposite material and an organic compound positioned between the layers of the inorganic compound. As discussed in the present specification, the use of a nanocomposite material in the covering layer of a medium-voltage to high-voltage power cable limits the migration of space charges in order to improve the resistance of the cable to breakdown in the event of a change in polarity (Specification at page 6, lines 30-37).

It is the Examiner's position that Hendewerk discloses a power cable having a covering layer with an inorganic compound made from a nanocomposite material and an organic

compound positioned between the layers of the inorganic compound. The Examiner acknowledges that Hendewerk does not disclose that the inorganic compound is made from a nanocomposite material. Therefore, the Examiner looks to the polymer nanocomposite composition of Maxfield in an attempt to make up for this deficiency.

Hendewerk discloses a power cable having a core surrounded by two semiconductor shield layers and an insulation layer between the semiconductor shield layers. Hendewerk at Figs. 3-4. Although Hendewerk notes that the power cable is useful in high voltage applications, Hendewerk describes the power cable as having the “greatest advantage in low and medium voltage applications where water treeing is most common.” Hendewerk at 10:12-14.

Maxfield discloses a nanocomposite composition that includes continuous polymeric phase and inorganic platelet particles (for example, made from phyllosilicates). Maxfield further discloses that the nanocomposite composition provides several mechanical or permeability related advantages over the prior art. The composition is said to exhibit improved mechanical reinforcement, permeability to polymers, tensile strength, tensile modulus, and/or ultimate elongation. Hendewerk at 3:2-7 & 6:1-3. Maxfield also generally discusses that the nanocomposite composition can be used for several different molded articles, including, *as examples of molded articles*, sports equipment, bottles, and components for the electrical and electronic industries. Hendewerk at 6:30-36.

However, there is no motivation or suggestion to utilize Maxfield’s nanocomposite composition as the semiconductive layers of a medium-voltage to high-voltage power cable.

Maxfield's general disclosure that the nanocomposite composition can be used for molded electrical components is not objective evidence that one of ordinary skill in the art would have been motivated to provide Maxfield's nanocomposite composition as layers of the inorganic compound covering an organic compound in a medium-voltage to high-voltage power cable, but instead is merely evidence that one of ordinary skill would have been motivated to provide a molded article made of the nanocomposite composition.<sup>1</sup>

Maxfield does not suggest any application of the nanocomposite composition in a medium-voltage to high-voltage power cable, but instead merely suggests several mechanical or permeability related advantages of the nanocomposite composition. Applicants note that, although the present Application discusses the advantages of using a nanocomposite material in the covering layer of a medium-voltage to high-voltage power cable provided in the present specification, any reliance by the Examiner on the disclosures of the present specification as proving a motivation to combine the references would be impermissible.

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<sup>1</sup> The USPTO is held to a rigorous standard when trying to show that an invention would have been obvious in view of the combination of two or more references. See, *In re Sang Su Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002), citing, e.g., *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."). In *Lee*, the Federal Circuit further emphasized that the "need for specificity pervades this authority." (*Lee* at 1433 (citing *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"))). The factual inquiry into whether to combine references "must be based on objective evidence of record." *Lee* at 1433.

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Therefore, Applicants respectfully request the Examiner to withdraw the rejection of claim 1 at least because the combination of Hendewerk and Maxfield does not teach or suggest the claimed medium-voltage to high-voltage power cable having a covering layer with an inorganic compound made from a nanocomposite material and an organic compound positioned between the layers of the inorganic compound.

***Claim 11***

Independent claim 11 has been amended to recite that the inorganic compound is a nanocomposite material. Applicants respectfully request the Examiner to withdraw the rejection of claim 11 at least because the combination of Hendewerk and Maxfield does not teach or suggest the claimed method of fabricating a medium-voltage to high-voltage power cable having a material with an organic compound inserted between the layers of an inorganic compound made from a nanocomposite material. The fact that the combination of Hendewerk and Maxfield does not teach or suggest the requirement that the medium-voltage to high-voltage power cable has a material with an organic compound inserted between the layers of an inorganic compound made from a nanocomposite material is discussed in detail above with respect to the rejection of independent claim 1.

***Claims 2-10 and 12-17***

In addition, Applicants respectfully request the Examiner to withdraw the rejection of dependent claims 2-10 and 12-17 at least because of their dependency from one of independent claims 1 and 11.


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**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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